WHAT IS CLAIMED IS:

1. An aeration sensing device for detecting aeration in a lubricating fluid comprising:

a non-conductive sensor body having opposed first and second ends;

a conductive first ring positioned within said sensor body, said first ring including a first wall;

a conductive second ring positioned within said sensor body and extending concentrically around said first ring, said second ring including a second wall adjacent to and spaced from said first wall to form a first gap, said first and second walls being plates of a first capacitor; and

a lubrication flow path formed in said sensor body between said first and second ends and including said first gap,

whereby when a lubricating fluid is introduced to said lubrication flow path at said first end, the lubricating fluid flows through said first gap to said second end and serves as a dielectric material defining a capacitance value for said first capacitor.

2. The device according to claim 1 including a conductive segment positioned within said sensor body radially outwardly from said second ring and including a third wall adjacent to and spaced from said second wall to form a second gap in fluid communication with said lubrication flow path, said second gap being in the form of a dead-end cavity, said second and third walls being plates of a second capacitor whereby when aerated lubricating fluid is flowing in said lubrication path, a portion of the aerated lubricating fluid flows into said second gap and becomes de-aerated serving as a dielectric material defining a capacitance value for said second capacitor.

3. The device according to claim 2 wherein said sensor body is generally cylindrical and said first and second rings extend about a longitudinal axis of said sensor body.

4. The device according to claim 3 including a first terminal electrically connected to said first ring, a second terminal electrically connected to said second ring and a third terminal electrically connected to said segment, said first through third terminals extending radially through said sensor body.

5. The device according to claim 1 wherein said first and second walls each are formed as a plurality of wall segments extending axially and being separated by slots.

6. The device according to claim 1 wherein said first and second walls each are interrupted by a single slot.

7. The device according to claim 1 wherein said first ring has a radially outwardly extending terminal lug and said second wall has a slot formed therein receiving said terminal lug.

8. The device according to claim 1 wherein said sensor body has a central aperture formed therein permitting the lubricating fluid to flow from said second end to said first end of said sensor body.

9. The device according to claim 8 including a conduit extending through said central aperture, a first end of said conduit adapted to attach to a filtration device mount and a second end of said conduit adapted to attach to a filtration device.

10. An aeration sensing device for detecting aeration in a lubricating fluid comprising:

a generally cylindrical non-conductive sensor body having opposed first and second ends;

a conductive first ring positioned within said sensor body, said first ring including a first wall;

a conductive second ring positioned within said sensor body and extending concentrically around said first ring, said second ring including a second wall adjacent to and spaced from said first wall to form a first gap, said first and second walls being plates of a first capacitor;

a lubrication flow path formed in said sensor body between said first and second ends and including said first gap;

a conductive segment positioned within said sensor body radially outwardly from said second ring and including a third wall adjacent to and spaced from said second wall to form a second gap in fluid communication with said lubrication flow path, said second gap being in the form of a dead-end cavity, said second and third walls being plates of a second capacitor,

whereby when an aerated lubricating fluid is introduced to said lubrication flow path at said first end, the lubricating fluid flows through said first gap to said second end and serves as a dielectric material defining a capacitance value for said first capacitor and a portion of the aerated lubricating fluid flows into said second gap and becomes de-aerated serving as a dielectric material defining a capacitance value for said second capacitor.

11. The device according to claim 10 wherein said first and second walls each are formed as a plurality of wall segments extending axially and being separated by slots.

12. The device according to claim 10 wherein said first and second walls each are interrupted by a single slot.

13. The device according to claim 10 wherein surfaces of said first and second rings and said segment exposed to the lubricating fluid are coated with an electrically non-conductive material.

14. An aeration sensing system for detecting aeration in a lubricating fluid comprising:

a non-conductive sensor body having opposed first and second ends;

a first capacitor positioned within said sensor body and having spaced apart plates forming a first gap;

a lubrication flow path formed in said sensor body between said first and second ends and including said first gap;

a second capacitor positioned within said sensor body and having spaced apart plates forming a second gap in fluid communication with said lubrication flow path, said second gap being in the form of a dead-end cavity;

a bridge circuit having said first and second capacitors connected in associated legs thereof; and

a signal generator connected to and generating an input signal at an input of said bridge circuit, said bridge circuit being balanced when non-aerated lubricating fluid is flowing in said lubrication path and being unbalanced when aerated lubricating fluid is flowing in said lubrication path.

15. The aeration sensing system according to claim 14 wherein said signal generator is an oscillator.

16. The aeration sensing system according to claim 15 including a demodulator connected to an output of said bridge circuit for generating an output signal.

17. The aeration sensing system according to claim 14 wherein said plates of said first capacitor are first and second conductive rings positioned concentrically in said sensor body.

18. The aeration sensing system according to claim 17 wherein said plates of said second capacitor are said second conductive ring and a conductive segment positioned in said sensor body.

19. The aeration sensing system according to claim 18 wherein said first and second rings and said segment are formed of copper material.

20. The aeration sensing system according to claim 14 wherein said sensor body is formed of a plastic phenolic material.